

SOT-89 Plastic-Encapsulate Transistors

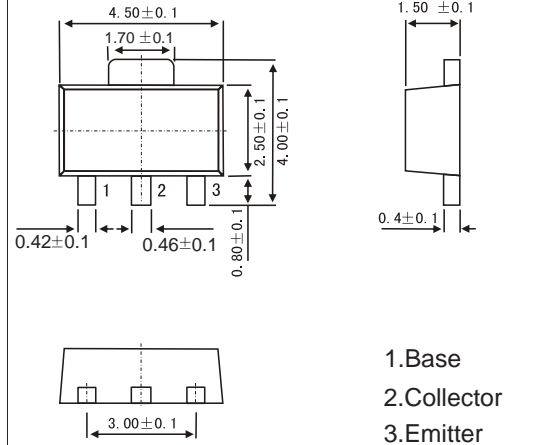
Features

- For general AF applications
- High collector current
- High current gain
- Low collector-emitter saturation voltage
- Complementary type: BCX 68 (NPN)
- PNP Transistors

MECHANICAL DATA

- Case style: SOT-89 molded plastic
- Mounting position: any

SOT-89



MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

| Parameter | Symbol | Rating | Unit |
|--|-------------------|------------|------|
| Collector - Base Voltage | V _{CB0} | -25 | V |
| Collector - Emitter Voltage | V _{CEO} | -20 | |
| Emitter - Base Voltage | V _{EB0} | -5 | |
| Collector Current - Continuous | I _C | -1 | A |
| Peak Collector Current | I _{CM} | -2 | |
| Base Current | I _B | -100 | mA |
| Peak Base Current | I _{BM} | -200 | |
| Collector Power Dissipation | P _C | 1 | W |
| Thermal Resistance. Junction- to-Ambient | R _{thJA} | 75 | K/W |
| Thermal Resistance. Case-to-Sink Typ | R _{thJS} | 20 | |
| Junction Temperature | T _J | 150 | °C |
| Storage Temperature range | T _{stg} | -65 to 150 | |

PACKAGE INFORMATION

| Device | Package | Shipping |
|---------------|---------|----------------|
| BCX69 (KCX69) | SOT-89 | 1000/Tape&Reel |

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--|----------------------|---|---|------|------|------|
| Collector- base breakdown voltage | V _{CB0} | I _C = -100μA, I _E =0 | -25 | | | V |
| Collector- emitter breakdown voltage | V _{CEO} | I _C = -10mA, I _B =0 | -20 | | | |
| Emitter - base breakdown voltage | V _{EB0} | I _E = -100 μ A, I _C =0 | -5 | | | |
| Collector-base cut-off current | I _{CBO} | V _{CB} = -25 V, I _E =0 | | | -100 | nA |
| Collector- base cut-off current Ta=150°C | | | | | | -10 |
| Emitter cut-off current | I _{EB0} | V _{EB} = -5V, I _C =0 | | | -10 | μA |
| Collector-emitter saturation voltage | V _{CE(sat)} | I _C =-1A, I _B =-100mA | | | -0.5 | V |
| Base - emitter saturation voltage | V _{BE} | I _C = -5mA, V _{CE} =-10V | | -0.6 | | |
| | | I _C = -1A, V _{CE} =-1V | | | -1 | |
| DC current gain | | h _{FE} | V _{CE} = -10V, I _C = -5mA | 50 | | |
| | | | | 85 | | 375 |
| | | | | 85 | 100 | 160 |
| | | | | 100 | 160 | 250 |
| | | | | 160 | 250 | 375 |
| | | | I _C = -1 A, V _{CE} = -1 V | 60 | | |
| Transition frequency | f _T | V _{CE} = -5V, I _C = -100mA, f=20MHz | | 100 | | MHz |

■ Classification of h_{FE}(2)

| Marking | BCX69 | BCX69-10 | BCX69-16 | BCX69-25 |
|---------|-------|----------|----------|----------|
| Range | CE | CF | CG | CH |

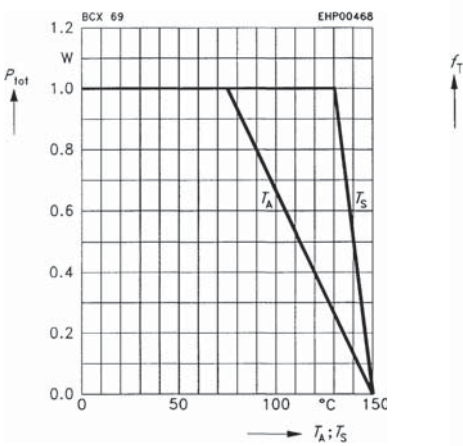
RATINGS AND CHARACTERISTIC CURVES

Typical Characteristics

Total power dissipation

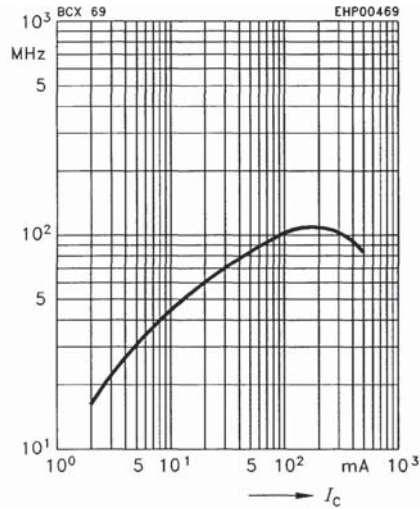
$$P_{tot} = f(T_A^*; T_S)$$

※ Package mounted on epoxy



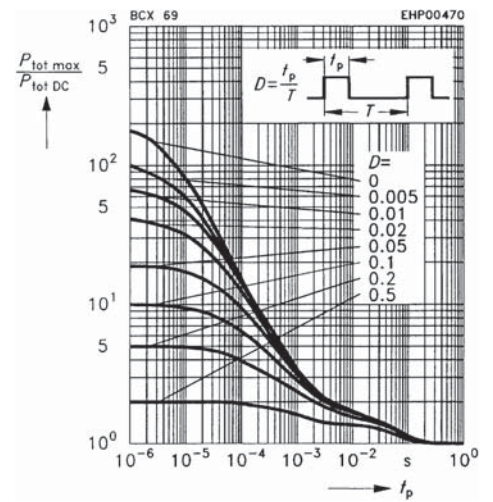
Transition frequency

$$f_T = f(I_C) \quad V_{CE} = 5 \text{ V}$$



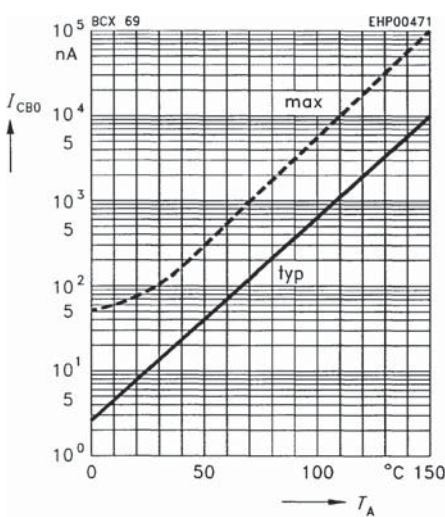
Permissible pulse load

$$P_{tot \text{ max}}/P_{tot \text{ DC}} = f(t_p)$$



Collector cutoff current

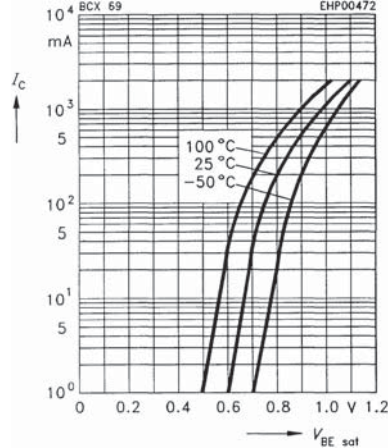
$$I_{CB0} = f(T_A) \quad V_{CB} = 25 \text{ V}$$



Base-emitter saturation voltage

$$I_C = f(V_{BE \text{ sat}})$$

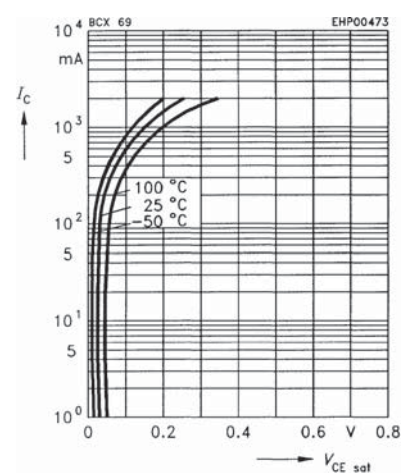
$$h_{FE} = 10$$



Collector-emitter saturation voltage

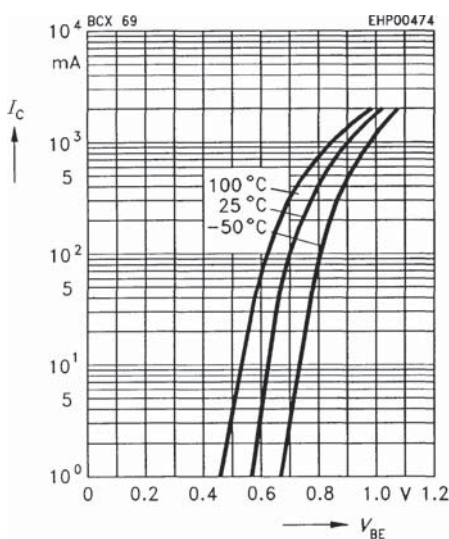
$$I_C = f(V_{CE \text{ sat}})$$

$$h_{FE} = 10$$



Collector current $I_C = f(V_{BE})$

$$V_{CE} = 1 \text{ V}$$



DC current gain $h_{FE} = f(I_C)$

$$V_{CE} = 1 \text{ V}$$

